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1. (Twice Amended) A method for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:
 - arming an event monitor, via execution of an arm instruction, by identifying at least one event to be monitored;
 - requesting that the thread of control be halted until any such identified event is observed by the event monitor; and
 - if execution of the thread of control has been halted,
 - monitoring, by the event monitor, for an identified event; and
 - resuming execution of the thread of control subsequent to observation of an identified event by the event monitor.

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1. (Twice Amended) The method of Claim 1, wherein execution of the arm instruction further comprises:
 - setting an indicator to a first state which enables the event monitor to monitor for the event, wherein the indicator is set to a second state if the event occurs.

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18. (Twice Amended) The method of Claim 1, further comprising:
 - executing a quiesce instruction to request that the thread of control be halted.

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22. (Twice Amended) The method of Claim 1, further comprising:
 - while the thread of control is halted,
 - fetching instructions from said thread of control, and
 - allowing the fetched instructions to propagate into an instruction pipeline.

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26. (Amended) The method of Claim 1 wherein the thread of control is executing in a multiprocessor environment.

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31. (Twice Amended) A system for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

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an event monitor which, by execution of an arm instruction, is armed via identification of an event to be monitored; and

an execution scheduler, responsive to the event monitor, which, upon a request that the thread of control be halted until the event is observed by the event monitor, halts execution of the thread of control if the event has not yet occurred since the event monitor was armed, and which resumes execution of the thread of control upon observation of the event by the event monitor.

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(Amended) The system of Claim 31 wherein the thread of control is executing in a multithreaded environment.

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(Amended) A system for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

event monitoring means;

arming means for arming the event monitoring means by identification of at least one event to be monitored, upon the execution of an arm instruction;

requesting means for requesting that the thread of control be halted until any such identified event is observed by the event monitoring means; and

halting means for halting the thread of control responsive to the requesting means, wherein if execution of the thread of control is halted, execution of the thread of control is resumed subsequent to observation of an identified event by the event monitoring means.

50. (Amended) An electronic circuit for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

an event monitor circuit, for monitoring, upon the execution of an arm instruction, for at least one event identified by the thread of control;

a quiesce logic circuit, which, responsive to the event monitor circuit and to a request from the thread of control to quiesce, temporarily halts execution of the thread of

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control, and which, responsive to the event monitor circuit upon observation of at least one identified event, resumes execution of the halted thread of control.

Please add new Claims 58-62.

~~56~~ 58. (New) A system for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

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an event monitor which is armed via identification of an event to be monitored, the event to be monitored being identified by at least one memory location to be monitored, and the event comprising a modification to at least one of the identified memory locations;

an execution scheduler, responsive to the event monitor, which, upon a request that the thread of control be halted until the event is observed by the event monitor, halts execution of the thread of control if the event has not yet occurred since the event monitor was armed, and which resumes execution of the thread of control upon observation of the event by the event monitor;

a working register associated with the thread of control, into which a physical address of the memory location is stored upon arming of the event monitor; and

an indicator associated with the thread of control, the indicator being set to a first state upon arming the event server, causing the event monitor to monitor for the event, and the indicator being set to a second state by the event monitor upon a change to the memory location whose address is recorded in the working register.

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~~59.~~ 58. (New) The system of Claim ~~58~~ 59, wherein a value is loaded from the identified memory location upon storing the memory location's address in the working register, such that a determination may be made as to whether the memory location's state has changed after arming the event monitor and before halting the thread's execution.

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~~60.~~ 60. (New) A method for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

identifying at least one event to be monitored;

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executing an arm instruction to arm an event monitor to monitor for any such identified event;

requesting that the thread of control be halted until any such identified event is observed by the event monitor; and

if execution of the thread of control has been halted,

monitoring, by the event monitor, for an identified event; and

resuming execution of the thread of control subsequent to observation of an identified event by the event monitor.

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~~61.~~ (New) A system for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

an event monitor which is armed via execution of an arm instruction to monitor for an identified event; and

an execution scheduler, responsive to the event monitor, which, upon a request that the thread of control be halted until the event is observed by the event monitor, halts execution of the thread of control if the event has not yet occurred since the event monitor was armed, and which resumes execution of the thread of control upon observation of the event by the event monitor.

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~~62.~~ (New) A system for temporarily halting execution of a thread of control while the thread of control is waiting for an event to occur, comprising:

event monitoring means;

arming means for arming, upon the execution of an arm instruction the event, said monitoring means for monitoring at least one identified event;

requesting means for requesting that the thread of control be halted until any such identified event is observed by the event monitoring means; and

halting means for halting the thread of control responsive to the requesting means, wherein if execution of the thread of control is halted, execution of the thread of control is resumed subsequent to observation of an identified event by the event monitoring means.

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